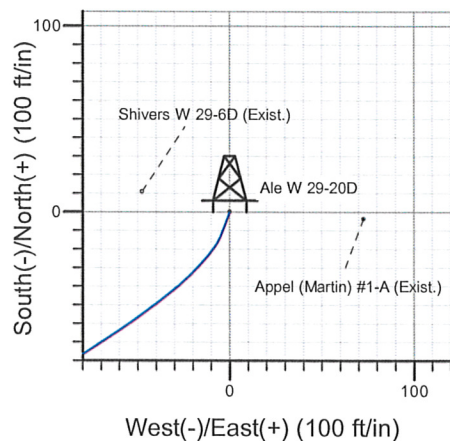
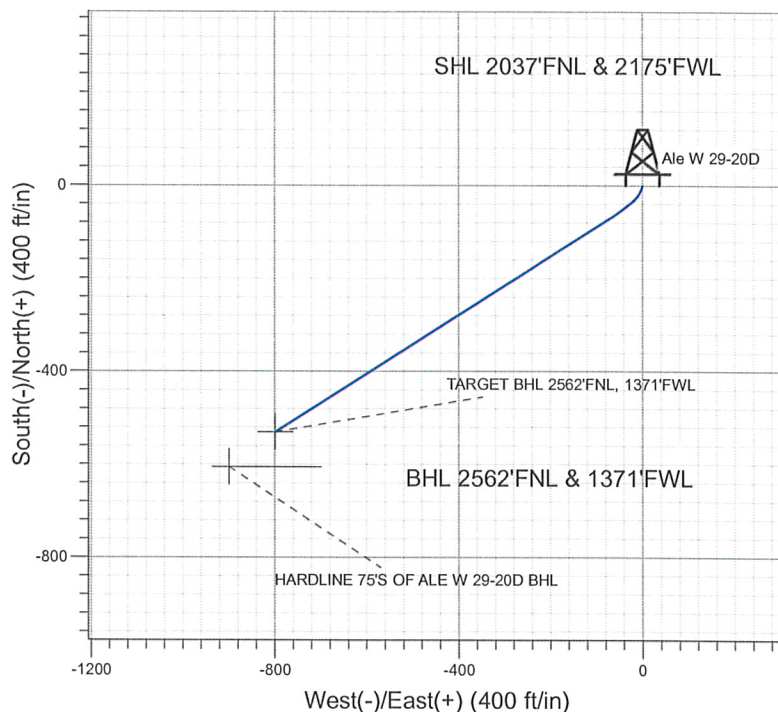
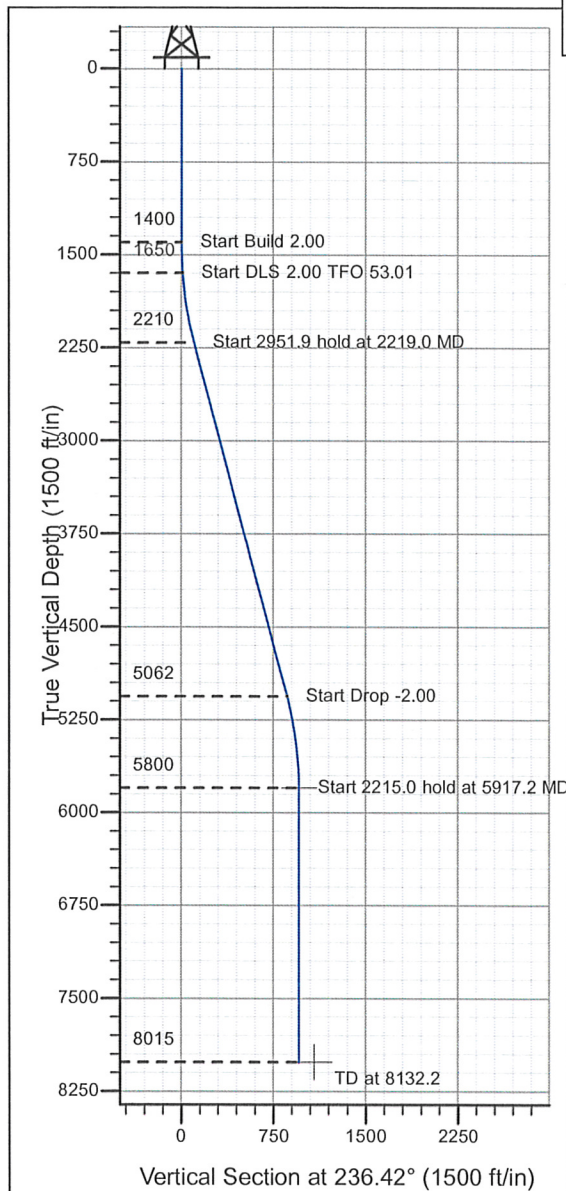


## Well Name: Ale W 29-20D

Surface Location: Ale Pad Sec.29-T2N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4889.0

+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1283956.98	3195001.08	40° 6' 38.700 N104° 48' 10.116 W	
		Original Well Elev		WELL @ 4902.0ft (Original Well Elev)	

**NOBLE ENERGY INC WELD COUNTY CO**



Azimuths to True North  
Magnetic North:  $9.17^\circ$

Magnetic Field  
Strength: 53258.9snT  
Dip Angle: 66.90°  
Date: 12/1/2008  
Model: IGRF200510

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2562'FNL, 1371'FWL	5800.0	-530.4	-799.0	40° 6' 33.458 N	104° 48' 20.399 W	Point
HARDLINE 75'S OF ALE W 29-20D BHL	8015.0	-605.4	-899.0	40° 6' 32.717 N	104° 48' 21.686 W	Polygon

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1650.0	5.00	200.00	1649.7	-10.2	-3.7	2.00	200.00	8.8	
4	2219.0	14.93	237.73	2209.8	-72.9	-74.4	2.00	53.01	102.3	
5	5170.9	14.93	237.73	5062.1	-478.8	-717.2	0.00	0.00	862.4	
6	5917.2	0.00	0.00	5800.0	-530.4	-799.0	2.00	180.00	959.0	TARGET BHL 2562'FNL, 1371'FWL
7	8132.2	0.00	0.00	8015.0	-530.4	-799.0	0.00	0.00	959.0	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.29-T2N-R66W**

**Ale Pad Sec.29-T2N-R66W**

**Ale W 29-20D**

**Ale W 29-20D**

**Plan: Ale W 29-20D**

### **Standard Planning Report**

**01 December, 2008**





Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ale W 29-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4902.0ft (Original Well Elev)
Project:	SEC.29-T2N-R66W	MD Reference:	WELL @ 4902.0ft (Original Well Elev)
Site:	Ale Pad Sec.29-T2N-R66W	North Reference:	True
Well:	Ale W 29-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Ale W 29-20D		
Design:	Ale W 29-20D		

Project	SEC.29-T2N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Ale Pad Sec.29-T2N-R66W			
Site Position:		Northing:	1,283,956.99ft	Latitude:	40° 6' 38.700 N
From:	Lat/Long	Easting:	3,195,001.08ft	Longitude:	104° 48' 10.116 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.45 °

Well	Ale W 29-20D					
Well Position	+N/-S	0.0 ft	Northing:	1,283,956.98 ft	Latitude:	40° 6' 38.700 N
	+E/-W	0.0 ft	Easting:	3,195,001.08 ft	Longitude:	104° 48' 10.116 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,889.0 ft	

Wellbore	Ale W 29-20D			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/1/2008	9.17	66.90	53,259

Design	Ale W 29-20D			
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Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	236.42

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,650.0	5.00	200.00	1,649.7	-10.2	-3.7	2.00	2.00	0.00	200.00	
2,219.0	14.93	237.73	2,209.8	-72.9	-74.4	2.00	1.74	6.63	53.01	
5,170.9	14.93	237.73	5,062.1	-478.8	-717.2	0.00	0.00	0.00	0.00	
5,917.2	0.00	0.00	5,800.0	-530.4	-799.0	2.00	-2.00	0.00	180.00	TARGET BHL 2562
8,132.2	0.00	0.00	8,015.0	-530.4	-799.0	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ale W 29-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4902.0ft (Original Well Elev)
Project:	SEC.29-T2N-R66W	MD Reference:	WELL @ 4902.0ft (Original Well Elev)
Site:	Ale Pad Sec.29-T2N-R66W	North Reference:	True
Well:	Ale W 29-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Ale W 29-20D		
Design:	Ale W 29-20D		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.80	200.00	1,440.0	-0.3	-0.1	0.2	2.00	2.00	0.00
1,480.0	1.60	200.00	1,480.0	-1.0	-0.4	0.9	2.00	2.00	0.00
1,520.0	2.40	200.00	1,520.0	-2.4	-0.9	2.0	2.00	2.00	0.00
1,560.0	3.20	200.00	1,559.9	-4.2	-1.5	3.6	2.00	2.00	0.00
1,600.0	4.00	200.00	1,599.8	-6.6	-2.4	5.6	2.00	2.00	0.00
1,640.0	4.80	200.00	1,639.7	-9.4	-3.4	8.1	2.00	2.00	0.00
1,650.0	5.00	200.00	1,649.7	-10.2	-3.7	8.8	2.00	2.00	0.00
1,680.0	5.38	205.12	1,679.6	-12.7	-4.8	11.0	2.00	1.27	17.05
1,720.0	5.95	210.85	1,719.4	-16.2	-6.6	14.5	2.00	1.41	14.35
1,760.0	6.56	215.56	1,759.1	-19.9	-9.0	18.5	2.00	1.54	11.77
1,800.0	7.21	219.45	1,798.8	-23.7	-11.9	23.0	2.00	1.63	9.71
1,840.0	7.89	222.68	1,838.5	-27.6	-15.4	28.1	2.00	1.70	8.08
1,880.0	8.59	225.39	1,878.1	-31.7	-19.4	33.7	2.00	1.75	6.79
1,920.0	9.31	227.70	1,917.6	-36.0	-23.9	39.8	2.00	1.79	5.77
1,960.0	10.03	229.68	1,957.0	-40.4	-29.0	46.5	2.00	1.82	4.94
2,000.0	10.77	231.39	1,996.4	-45.0	-34.5	53.7	2.00	1.85	4.28
2,040.0	11.52	232.88	2,035.6	-49.8	-40.6	61.4	2.00	1.87	3.73
2,080.0	12.27	234.19	2,074.8	-54.7	-47.3	69.6	2.00	1.88	3.28



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ale W 29-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4902.0ft (Original Well Elev)
Project:	SEC.29-T2N-R66W	MD Reference:	WELL @ 4902.0ft (Original Well Elev)
Site:	Ale Pad Sec.29-T2N-R66W	North Reference:	True
Well:	Ale W 29-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Ale W 29-20D		
Design:	Ale W 29-20D		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,120.0	13.03	235.35	2,113.8	-59.7	-54.4	78.4	2.00	1.90	2.91
2,160.0	13.79	236.39	2,152.7	-64.9	-62.1	87.7	2.00	1.91	2.59
2,200.0	14.56	237.32	2,191.5	-70.3	-70.3	97.5	2.00	1.92	2.32
2,219.0	14.93	237.73	2,209.8	-72.9	-74.4	102.3	2.00	1.92	2.15
2,240.0	14.93	237.73	2,230.1	-75.8	-79.0	107.7	0.00	0.00	0.00
2,280.0	14.93	237.73	2,268.8	-81.3	-87.7	118.0	0.00	0.00	0.00
2,320.0	14.93	237.73	2,307.4	-86.8	-96.4	128.3	0.00	0.00	0.00
2,360.0	14.93	237.73	2,346.1	-92.3	-105.1	138.6	0.00	0.00	0.00
2,400.0	14.93	237.73	2,384.7	-97.8	-113.8	148.9	0.00	0.00	0.00
2,440.0	14.93	237.73	2,423.4	-103.3	-122.5	159.2	0.00	0.00	0.00
2,480.0	14.93	237.73	2,462.0	-108.8	-131.2	169.5	0.00	0.00	0.00
2,520.0	14.93	237.73	2,500.7	-114.3	-139.9	179.8	0.00	0.00	0.00
2,560.0	14.93	237.73	2,539.3	-119.8	-148.7	190.1	0.00	0.00	0.00
2,600.0	14.93	237.73	2,578.0	-125.3	-157.4	200.4	0.00	0.00	0.00
2,640.0	14.93	237.73	2,616.6	-130.8	-166.1	210.7	0.00	0.00	0.00
2,680.0	14.93	237.73	2,655.3	-136.3	-174.8	221.0	0.00	0.00	0.00
2,720.0	14.93	237.73	2,693.9	-141.8	-183.5	231.3	0.00	0.00	0.00
2,760.0	14.93	237.73	2,732.6	-147.3	-192.2	241.6	0.00	0.00	0.00
2,800.0	14.93	237.73	2,771.2	-152.8	-200.9	251.9	0.00	0.00	0.00
2,840.0	14.93	237.73	2,809.9	-158.3	-209.6	262.2	0.00	0.00	0.00
2,880.0	14.93	237.73	2,848.5	-163.8	-218.3	272.5	0.00	0.00	0.00
2,920.0	14.93	237.73	2,887.2	-169.3	-227.1	282.8	0.00	0.00	0.00
2,960.0	14.93	237.73	2,925.8	-174.8	-235.8	293.1	0.00	0.00	0.00
3,000.0	14.93	237.73	2,964.5	-180.3	-244.5	303.4	0.00	0.00	0.00
3,040.0	14.93	237.73	3,003.1	-185.8	-253.2	313.7	0.00	0.00	0.00
3,080.0	14.93	237.73	3,041.8	-191.3	-261.9	324.0	0.00	0.00	0.00
3,120.0	14.93	237.73	3,080.4	-196.8	-270.6	334.3	0.00	0.00	0.00
3,160.0	14.93	237.73	3,119.1	-202.3	-279.3	344.6	0.00	0.00	0.00
3,200.0	14.93	237.73	3,157.7	-207.8	-288.0	354.9	0.00	0.00	0.00
3,201.3	14.93	237.73	3,159.0	-208.0	-288.3	355.2	0.00	0.00	0.00
PIERRE SILT									
3,240.0	14.93	237.73	3,196.4	-213.3	-296.7	365.2	0.00	0.00	0.00
3,280.0	14.93	237.73	3,235.0	-218.8	-305.5	375.5	0.00	0.00	0.00
3,320.0	14.93	237.73	3,273.7	-224.3	-314.2	385.8	0.00	0.00	0.00
3,360.0	14.93	237.73	3,312.4	-229.8	-322.9	396.1	0.00	0.00	0.00
3,400.0	14.93	237.73	3,351.0	-235.3	-331.6	406.4	0.00	0.00	0.00
3,440.0	14.93	237.73	3,389.7	-240.8	-340.3	416.7	0.00	0.00	0.00
3,480.0	14.93	237.73	3,428.3	-246.3	-349.0	427.0	0.00	0.00	0.00
3,520.0	14.93	237.73	3,467.0	-251.8	-357.7	437.3	0.00	0.00	0.00
3,560.0	14.93	237.73	3,505.6	-257.3	-366.4	447.6	0.00	0.00	0.00
3,600.0	14.93	237.73	3,544.3	-262.8	-375.1	457.9	0.00	0.00	0.00
3,640.0	14.93	237.73	3,582.9	-268.3	-383.9	468.2	0.00	0.00	0.00
3,680.0	14.93	237.73	3,621.6	-273.8	-392.6	478.5	0.00	0.00	0.00
3,720.0	14.93	237.73	3,660.2	-279.3	-401.3	488.8	0.00	0.00	0.00
3,760.0	14.93	237.73	3,698.9	-284.8	-410.0	499.1	0.00	0.00	0.00
3,800.0	14.93	237.73	3,737.5	-290.3	-418.7	509.4	0.00	0.00	0.00
3,840.0	14.93	237.73	3,776.2	-295.8	-427.4	519.7	0.00	0.00	0.00
3,880.0	14.93	237.73	3,814.8	-301.3	-436.1	530.0	0.00	0.00	0.00
3,920.0	14.93	237.73	3,853.5	-306.8	-444.8	540.3	0.00	0.00	0.00
3,960.0	14.93	237.73	3,892.1	-312.3	-453.5	550.6	0.00	0.00	0.00
4,000.0	14.93	237.73	3,930.8	-317.8	-462.2	560.9	0.00	0.00	0.00
4,040.0	14.93	237.73	3,969.4	-323.3	-471.0	571.2	0.00	0.00	0.00
4,080.0	14.93	237.73	4,008.1	-328.8	-479.7	581.5	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ale W 29-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4902.0ft (Original Well Elev)
Project:	SEC.29-T2N-R66W	MD Reference:	WELL @ 4902.0ft (Original Well Elev)
Site:	Ale Pad Sec.29-T2N-R66W	North Reference:	True
Well:	Ale W 29-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Ale W 29-20D		
Design:	Ale W 29-20D		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,120.0	14.93	237.73	4,046.7	-334.3	-488.4	591.8	0.00	0.00	0.00
4,137.9	14.93	237.73	4,064.0	-336.8	-492.3	596.4	0.00	0.00	0.00
<b>PARKMAN</b>									
4,160.0	14.93	237.73	4,085.4	-339.8	-497.1	602.1	0.00	0.00	0.00
4,200.0	14.93	237.73	4,124.0	-345.3	-505.8	612.4	0.00	0.00	0.00
4,240.0	14.93	237.73	4,162.7	-350.8	-514.5	622.7	0.00	0.00	0.00
4,280.0	14.93	237.73	4,201.3	-356.3	-523.2	633.0	0.00	0.00	0.00
4,320.0	14.93	237.73	4,240.0	-361.8	-531.9	643.3	0.00	0.00	0.00
4,360.0	14.93	237.73	4,278.6	-367.3	-540.6	653.6	0.00	0.00	0.00
4,400.0	14.93	237.73	4,317.3	-372.8	-549.4	663.9	0.00	0.00	0.00
4,440.0	14.93	237.73	4,355.9	-378.3	-558.1	674.2	0.00	0.00	0.00
4,480.0	14.93	237.73	4,394.6	-383.8	-566.8	684.5	0.00	0.00	0.00
4,520.0	14.93	237.73	4,433.2	-389.3	-575.5	694.8	0.00	0.00	0.00
4,560.0	14.93	237.73	4,471.9	-394.8	-584.2	705.1	0.00	0.00	0.00
4,600.0	14.93	237.73	4,510.5	-400.3	-592.9	715.4	0.00	0.00	0.00
4,640.0	14.93	237.73	4,549.2	-405.8	-601.6	725.7	0.00	0.00	0.00
4,680.0	14.93	237.73	4,587.8	-411.3	-610.3	736.0	0.00	0.00	0.00
4,691.6	14.93	237.73	4,599.0	-412.9	-612.9	739.0	0.00	0.00	0.00
<b>SUSSEX</b>									
4,720.0	14.93	237.73	4,626.5	-416.8	-619.0	746.3	0.00	0.00	0.00
4,760.0	14.93	237.73	4,665.1	-422.3	-627.8	756.6	0.00	0.00	0.00
4,800.0	14.93	237.73	4,703.8	-427.8	-636.5	766.9	0.00	0.00	0.00
4,840.0	14.93	237.73	4,742.4	-433.3	-645.2	777.2	0.00	0.00	0.00
4,880.0	14.93	237.73	4,781.1	-438.8	-653.9	787.5	0.00	0.00	0.00
4,920.0	14.93	237.73	4,819.7	-444.3	-662.6	797.8	0.00	0.00	0.00
4,960.0	14.93	237.73	4,858.4	-449.8	-671.3	808.1	0.00	0.00	0.00
5,000.0	14.93	237.73	4,897.0	-455.3	-680.0	818.4	0.00	0.00	0.00
5,040.0	14.93	237.73	4,935.7	-460.8	-688.7	828.7	0.00	0.00	0.00
5,080.0	14.93	237.73	4,974.3	-466.3	-697.4	839.0	0.00	0.00	0.00
5,120.0	14.93	237.73	5,013.0	-471.8	-706.2	849.3	0.00	0.00	0.00
5,160.0	14.93	237.73	5,051.6	-477.3	-714.9	859.6	0.00	0.00	0.00
5,170.9	14.93	237.73	5,062.1	-478.8	-717.2	862.4	0.00	0.00	0.00
5,200.0	14.34	237.73	5,090.3	-482.7	-723.5	869.7	2.00	-2.00	0.00
5,240.0	13.54	237.73	5,129.1	-487.9	-731.6	879.4	2.00	-2.00	0.00
5,280.0	12.74	237.73	5,168.1	-492.7	-739.3	888.5	2.00	-2.00	0.00
5,320.0	11.94	237.73	5,207.2	-497.3	-746.5	897.0	2.00	-2.00	0.00
5,360.0	11.14	237.73	5,246.4	-501.6	-753.3	905.0	2.00	-2.00	0.00
5,400.0	10.34	237.73	5,285.6	-505.6	-759.6	912.5	2.00	-2.00	0.00
5,440.0	9.54	237.73	5,325.0	-509.3	-765.4	919.4	2.00	-2.00	0.00
5,480.0	8.74	237.73	5,364.5	-512.6	-770.8	925.7	2.00	-2.00	0.00
5,518.9	7.97	237.73	5,403.0	-515.7	-775.6	931.4	2.00	-2.00	0.00
<b>SHANNON</b>									
5,520.0	7.94	237.73	5,404.1	-515.7	-775.7	931.5	2.00	-2.00	0.00
5,560.0	7.14	237.73	5,443.8	-518.6	-780.2	936.8	2.00	-2.00	0.00
5,600.0	6.34	237.73	5,483.5	-521.1	-784.1	941.5	2.00	-2.00	0.00
5,640.0	5.54	237.73	5,523.3	-523.3	-787.6	945.6	2.00	-2.00	0.00
5,680.0	4.74	237.73	5,563.1	-525.2	-790.7	949.2	2.00	-2.00	0.00
5,720.0	3.94	237.73	5,603.0	-526.8	-793.2	952.2	2.00	-2.00	0.00
5,760.0	3.14	237.73	5,642.9	-528.1	-795.3	954.7	2.00	-2.00	0.00
5,800.0	2.34	237.73	5,682.9	-529.1	-796.9	956.6	2.00	-2.00	0.00
5,840.0	1.54	237.73	5,722.9	-529.9	-798.1	958.0	2.00	-2.00	0.00
5,880.0	0.74	237.73	5,762.8	-530.3	-798.8	958.8	2.00	-2.00	0.00
5,917.2	0.00	0.00	5,800.0	-530.4	-799.0	959.0	2.00	-2.00	0.00



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ale W 29-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4902.0ft (Original Well Elev)
Project:	SEC.29-T2N-R66W	MD Reference:	WELL @ 4902.0ft (Original Well Elev)
Site:	Ale Pad Sec.29-T2N-R66W	North Reference:	True
Well:	Ale W 29-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Ale W 29-20D		
Design:	Ale W 29-20D		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>TARGET BHL 2562'FNL, 1371'FWL</b>									
5,920.0	0.00	0.00	5,802.8	-530.4	-799.0	959.0	0.00	0.00	0.00
5,960.0	0.00	0.00	5,842.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,882.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,040.0	0.00	0.00	5,922.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,080.0	0.00	0.00	5,962.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,120.0	0.00	0.00	6,002.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,160.0	0.00	0.00	6,042.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,082.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,240.0	0.00	0.00	6,122.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,280.0	0.00	0.00	6,162.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,320.0	0.00	0.00	6,202.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,360.0	0.00	0.00	6,242.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,282.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,440.0	0.00	0.00	6,322.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,480.0	0.00	0.00	6,362.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,520.0	0.00	0.00	6,402.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,560.0	0.00	0.00	6,442.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,482.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,640.0	0.00	0.00	6,522.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,680.0	0.00	0.00	6,562.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,720.0	0.00	0.00	6,602.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,760.0	0.00	0.00	6,642.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,682.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,840.0	0.00	0.00	6,722.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,880.0	0.00	0.00	6,762.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,920.0	0.00	0.00	6,802.8	-530.4	-799.0	959.0	0.00	0.00	0.00
6,960.0	0.00	0.00	6,842.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,882.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,040.0	0.00	0.00	6,922.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,080.0	0.00	0.00	6,962.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,120.0	0.00	0.00	7,002.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,160.0	0.00	0.00	7,042.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,082.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,235.2	0.00	0.00	7,118.0	-530.4	-799.0	959.0	0.00	0.00	0.00
<b>NIOBRARA</b>									
7,240.0	0.00	0.00	7,122.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,280.0	0.00	0.00	7,162.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,320.0	0.00	0.00	7,202.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,360.0	0.00	0.00	7,242.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,282.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,440.0	0.00	0.00	7,322.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,480.0	0.00	0.00	7,362.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,520.0	0.00	0.00	7,402.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,522.2	0.00	0.00	7,405.0	-530.4	-799.0	959.0	0.00	0.00	0.00
<b>FT HAYS</b>									
7,546.2	0.00	0.00	7,429.0	-530.4	-799.0	959.0	0.00	0.00	0.00
<b>CODELL</b>									
7,560.0	0.00	0.00	7,442.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,482.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,640.0	0.00	0.00	7,522.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,680.0	0.00	0.00	7,562.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,720.0	0.00	0.00	7,602.8	-530.4	-799.0	959.0	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ale W 29-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4902.0ft (Original Well Elev)
Project:	SEC.29-T2N-R66W	MD Reference:	WELL @ 4902.0ft (Original Well Elev)
Site:	Ale Pad Sec.29-T2N-R66W	North Reference:	True
Well:	Ale W 29-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Ale W 29-20D		
Design:	Ale W 29-20D		

#### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,760.0	0.00	0.00	7,642.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,682.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,840.0	0.00	0.00	7,722.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,880.0	0.00	0.00	7,762.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,920.0	0.00	0.00	7,802.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,960.0	0.00	0.00	7,842.8	-530.4	-799.0	959.0	0.00	0.00	0.00
7,982.2	0.00	0.00	7,865.0	-530.4	-799.0	959.0	0.00	0.00	0.00
<b>J SAND</b>									
8,000.0	0.00	0.00	7,882.8	-530.4	-799.0	959.0	0.00	0.00	0.00
8,040.0	0.00	0.00	7,922.8	-530.4	-799.0	959.0	0.00	0.00	0.00
8,080.0	0.00	0.00	7,962.8	-530.4	-799.0	959.0	0.00	0.00	0.00
8,120.0	0.00	0.00	8,002.8	-530.4	-799.0	959.0	0.00	0.00	0.00
8,132.2	0.00	0.00	8,015.0	-530.4	-799.0	959.0	0.00	0.00	0.00
<b>HARDLINE 75'S OF ALE W 29-20D BHL</b>									

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,201.3	3,159.0	PIERRE SILT		0.00	
4,137.9	4,064.0	PARKMAN		0.00	
4,691.6	4,599.0	SUSSEX		0.00	
5,518.9	5,403.0	SHANNON		0.00	
7,235.2	7,118.0	NIOBRARA		0.00	
7,522.2	7,405.0	FT HAYS		0.00	
7,546.2	7,429.0	CODELL		0.00	
7,982.2	7,865.0	J SAND		0.00	